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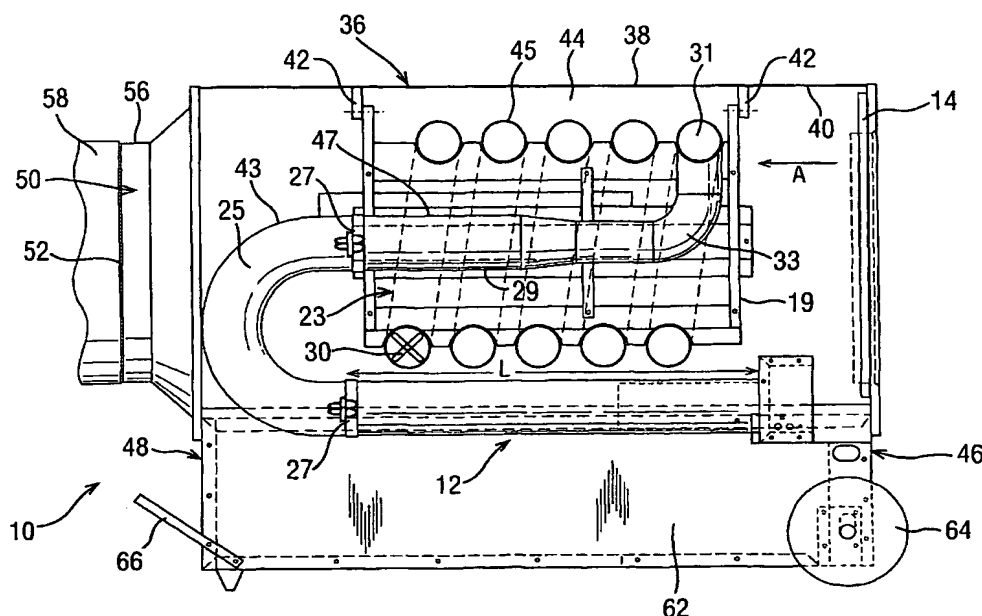
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[Continued on next page]

(54) Title: A RADIANT TUBE HEATER ASSEMBLY



(57) Abstract: An indirect heater assembly (10) comprises a radiant tube heater (12) and a fan (14) for generating an air flow over the heater (12). In an preferred embodiment and in another aspect, the radiant tube heater (12) comprises a radiant tube burner, an elongate tube (16) and a spiral tube (23) connected to the elongate tube (16) by a U-shaped tube (25). The spiral tube (23) extends around the elongate tube (16) coaxially thereof.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/04818

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F24C1/14 F23D14/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F24C F23D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 925 365 A (ERIC CLIFFORD TURNER) 8 May 1963 (1963-05-08) page 2, line 73 - page 2, line 114; figures	1-5,13, 15-17,20
X	US 6 024 083 A (SMIRNOV VALERIY) 15 February 2000 (2000-02-15) abstract; figure 1 column 3, line 61 - column 5, line 9	1-5,13, 15-17,20
Y	FR 2 609 157 A (DELEAGE PIERRE) 1 July 1988 (1988-07-01) abstract; figure 1 page 3, line 7 - page 3, line 26	1-5,13, 15-17,20
Y	GB 2 144 843 A (GEN ELECTRIC CANADA) 13 March 1985 (1985-03-13) abstract; figures 2,3	1-5,13, 15-17,20
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>PATENT ABSTRACTS OF JAPAN vol. 007, no. 183 (M-235), 12 August 1983 (1983-08-12) & JP 58 085022 A (MATSUSHITA SEIKO KK), 21 May 1983 (1983-05-21) abstract -----</p>	<p>1-5,13, 15-17,20</p>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/04818

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-20

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-20

An indirect heater assembly with an air flow generating means

2. claims: 21-26

A radiant tube heater having a straight portion and a spiral portion arranged around the straight portion

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No
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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 925365	A	08-05-1963	NONE	
US 6024083	A	15-02-2000	NONE	
FR 2609157	A	01-07-1988	FR 2609157 A1	01-07-1988
GB 2144843	A	13-03-1985	CA 1209631 A1	12-08-1986
JP 58085022	A	21-05-1983	NONE	